



MAJOR CHOSEN: ELECTRONICS AND COMPUTER TECHNOLOGY

I. A BRIEF DESCRIPTION OF THE MAJOR

In today's rapidly changing technological landscape, the fields of computer science and electronics are moving closer and closer together. A major in Electronics and Computer Technology encourages this blending by providing the student with courses from both disciplines. Consequently, the graduate is thoroughly prepared to meet the demands of both today and tomorrow's workplace. The student will study electrical fundamentals (both analog and digital), integrated circuit technologies, microcontrollers, and computer programming. A focus on laboratory experience and practical applications makes this degree extremely practical for many real-world jobs involving electronics and computers. A full liberal arts component including English, History, Psychology, Social Studies, Speech, and, of course, Bible makes you a far more well-rounded individual than you would be with just a two-year technology degree.

You can choose an optional emphasis in Broadcast Engineering. This option will prepare you for a career as a station engineer in either radio or television. The classroom work is thorough, and a strong emphasis is placed on practical preparation for the real world of broadcasting. Special emphasis is given to preparation for missionary radio and Christian radio in the U.S.

II. COURSE HIGHLIGHTS

Here are some of the courses you will especially enjoy:

Digital Electronics From simple logic gates to complex programmable logic devices, this class is the foundation for everything digital.

Programmable Logic Controllers These special purpose industrial computers are the standard solution for controlling factory automation and robotics.

Linear Integrated Circuits Everything seems to be going digital, but the real world is still analog. This advanced analog class teaches you how to use op-amps, the building block for serious analog circuitry.

Computer Systems Assembly language is the place where software meets hardware. If you *really* want to understand how computers work, this class is a must.

Communication Circuits (Broadcast Engineering option) Here you will learn about circuits used in generating, amplifying, modulating, demodulating, and signal processing in modern communication systems, including AM, FM, and TV.



Design Problems To finish off your degree, you must design and build a complex electronic device from start to finish, including manufacturing your own circuit board and building your own enclosure.

III. A TYPICAL YEARLY COURSE SEQUENCE

This is a suggested program of study for you. Other refinements to your program can be made when you consult your faculty advisor at the time of your enrollment.

You will notice that some courses are listed as electives. These electives give you the opportunity to tailor your program by selecting courses you would like to take for your own personal enjoyment.

Freshman

Orientation	1	Orientation	1
Engineering Graphics I	1	Digital Electronics	3
Electronics I	3	Electronics II	3
College Algebra	3	Transcendental Functions*	3
Old Testament Messages	1	Introduction to Computer Programming	3
Fundamentals of Speech	3	New Testament Messages	1
English Composition	<u>3</u>	English Composition	<u>3</u>
Total	15	Total	17

Sophomore

Solid State Applications I	3	Fundamentals of Technical Writing	3
Power Systems	3	Solid State Applications II	3
History of Civilization	3	Data Communication Systems	3
General Psychology	3	History of Civilization	3
Sophomore Bible Elective	1	Sophomore Bible Elective	1
English Literature	<u>3</u>	Social Studies Elective	<u>3</u>
Total	16	Total	16

Junior

Pulse Techniques	3	Linear Integrated Circuits	3
Engineering Graphics II	3	Microprocessor Interfacing	3
Computer Systems	3	Christian Family Forum	1
Bible Doctrines	3	Bible Doctrines.....	3
Social Studies Elective	3	Oral Communication for the Professions	3
Minor or Electives	<u>1</u>	Psychology Elective	<u>3</u>
Total	16	Total	16

Senior

Design Problems	1	Programmable Logic Controllers	3
Embedded Systems	3	Electronics Elective.....	3
Upper-Level Bible Elective	2	Upper-Level Bible Elective.....	2
Minor or Electives	<u>10</u>	Minor or Electives.....	<u>8</u>
Total	16	Total	16

* You should take high school math at least through Algebra II. Students with a math ACT score below 20 will be required to take a math placement test and may be required to take remedial math classes.



IV. FACILITIES, EQUIPMENT, AND OPPORTUNITIES

In addition to classroom instruction, you will receive "hands on" experience in our laboratories. You will take at least ten classes with a lab component including:

Basic Circuits Lab—Here you will learn the basics of AC and DC circuits as well as basic construction techniques such as soldering and project assembly.

Digital Electronics Lab—In this laboratory you will practice textbook theory by designing and building various digital circuits both in simulation and physical form.

Microprocessor Interfacing Lab—Learn how to interface memory chips, parallel and serial ports, analog I/O, timers, and much more in this foundational computer hardware lab.

Engineering Graphics Lab—Intensive practice leaves you with experience in two major industry-standard CAD (Computer Aided Drafting) software packages including AutoCAD.

Embedded Systems Lab—A large team design project, often involving robotics, tests your understanding and teaches you how to work as part of an engineering team.

Design Contests are a great way to compare your skills to those of students at other schools. In recent years our students have built a robot for the Intelligent Ground Vehicle Competition (www.igvc.org), and in 2006 we achieved a top-five finish in this event.

Chapel is a central feature of Bob Jones University. This 35-minute service is held every morning, Monday through Thursday. These services are a source of great inspiration to students. Four days a week the Chapel message is brought by the President or by selected speakers. Each Friday the Chapel period is devoted to the meetings of various literary societies.

The annual spring Bible Conference is one of the outstanding features of the University and Academy year. Your regular academic work will be suspended for the Conference, during which you will hear messages from outstanding Bible teachers, pastors, and evangelists.

The productions of the *University Classic Players* and *Opera Association* will enable you in four years to see several Shakespearean plays and grand operas performed on campus. Every year there are also frequent recitals and student performances in theater, speech, and music.

All students have opportunity to participate in the University's athletic program. Through a well-integrated program of intramural athletic competition, a very high percentage of student participation is possible. You will have the opportunity to compete in a wide variety of both team and individual sports including soccer, basketball, softball, volleyball, tennis, badminton, racquetball, and water polo.



The Mack Library covers 89, 000 square feet of floor space and has seating for over 1,300 students. It provides you with 318, 000 items, including 17,000 music recordings, 70 electronic databases through the library website, and over 1,100 current periodical titles. In addition, the library participates in the statewide PASCAL Delivers program, allowing students to check out books from a statewide catalog of over nine million books. An interlibrary loan program for out of state borrowing is available through OCLC, a national database for books not held in our library. Other prominent features include the Jerusalem Chamber, a replica of a room in London's Westminster Abby in which work was done on the 1611 King James Bible, and the University Archives Room which displays materials about the Founder and the history of Bob Jones University.

Davis Field House, with over 87,000 square feet and seating for 3,000 people, contains 4 full-sized courts; auxiliary courts; indoor and outdoor tracks; swimming pool; café; and a fitness center with fully-equipped exercise room, aerobic room, sauna, and whirlpool.

Completely equipped computer laboratories are available for your use. There are many academic computer labs conveniently located all over campus, including a power-user lab for Computer Science, Engineering, and Electronics students. This lab is equipped with dual-monitor 1 GHz Pentium multimedia machines running Windows XP, in addition to Macintosh and LINUX machines. All students receive an email address and have high-speed filtered Internet access.

If you are planning to live on campus, you will be glad to know that all of our residence halls are air-conditioned, have wall-to-wall carpeting, and have a phone in each room. You will be able to make long-distance calls directly from your room and have them automatically placed on your school bill. Computer network connectivity is available in all residence halls, as well.

All of our classrooms are air-conditioned, and most sidewalks are covered to keep you dry when it is raining. The Dining Common serves 8,500 delicious meals a day, and the Snack Shop and Campus Store in the Student Center carry just about anything you'll need.

You will find the finest Christian young people in the country are your fellow students, and without trying too hard, you may end up making a life-long friend!

V. ABOUT THE FACULTY

The professors in the Physics/Engineering department bring to the classroom a rich blend of thorough academic backgrounds, outstanding professional expertise, and extensive practical experience. Some have doctorates in electrical and computer engineering, while others have extensive industry background. Still others have been on the mission field where they assisted in the maintenance and installation of radio stations and acted as consulting engineers in audio and radio frequency applications. As a student you will greatly benefit from this unique combination of theory, practice, and experience.



VI. CAREER OPPORTUNITIES AND PLACEMENT

Our Electronics and Computer Technology program is designed to lead into jobs and careers immediately. Our graduates will find career opportunities in many areas since companies in many different fields make extensive use of electronics and computers. Some examples include:

Manufacturing
Robotics
Computer Systems
Industrial Electronics
Medical Electronics
Embedded Electronics

Automotive
Communications (cable, radio, satellite, etc.)
Quality control, test, and calibration
Repair
Technical sales and support
Industrial testing and lab work

VII. BJU: AN AFFORDABLE EDUCATION

Enclosed is an expense sheet detailing the cost of attending Bob Jones University. When you compare our charges to those of other private colleges, we think you will be pleasantly surprised. We believe we offer a student more value for his dollar than anyone else in America. And to help you see how affordable "the Opportunity Place" can be for you, we have enclosed a financial aid brochure that you can use to evaluate your own situation. Your Admissions Counselor or the Financial Aid Counselor would be happy to discuss this with you if you have any questions.

HOW TO TAKE THE NEXT STEP . . .

If you can see yourself in the career described in the profile, then a great opportunity awaits you at Bob Jones University. It is the opportunity for the premier Christian college experience in all the world. It is the opportunity for learning, for fun, and for developing new friendships. It is the opportunity to prepare for a lifetime of service for the Lord . . .

The Opportunity Place . . . God's Special Place for You.

For further information about all of the science and engineering options available at BJU, call your admissions counselor to arrange a phone call with one of the department's professors. Professors also welcome email questions. More information about the Physics and Engineering Department is also available on the department web page at www.bju.edu.